

EECS 498 W26 System Design of a Search Engine

01 MostPositiveSubsequence

Due Sunday, January 11, 2026, 11:59 pm

The purpose of this assignment is to give you a quick check on the level of difficulty to expect in this class and the basic coding skills you'll need.

Starter files

You are given these starter files in `MostPositiveSubsequenceStarter.zip`.

`MostPositiveSubsequence.h` Defines the `MostPositiveSubsequence` function you will write.

`Makefile` A makefile to build the `BestSubsequence` utility you will write, using your `MostPositiveSubsequence` function.

The assignment

You are given this definition in `MostPositiveSubsequence.h`.

```
// Find the most positive subsequence of an array of N integers.
// Return the sum and the left and right indices of the subsequence.

// For example, for the sequence
//
// { -1, 3, 5, 6, -2, -4, 1, 7, -15, 12, 7, -5 }
//
// the best sum = 20, left = 1, right = 10.

int MostPositiveSubsequence( const int a[ ], const int n,
                           int &bestL, int &bestR );
```

1. Write and submit two C++ files to the autograder at <https://autograder.io/web/project/3497>.
 - a) `MostPositiveSubsequence.cpp`, containing an implementation of that `MostPositiveSubsequence( )` routine.
 - b) `BestSubsequence.cpp`, containing a simple `main( )` routine to that takes a sequence on the command line as an `argv` and reports the results of scanning it with your function to `stdout` as shown here. The usage message should go to `stderr`. The return code is 1 for a usage message, zero otherwise.

```
% g++ BestSubsequence.cpp MostPositiveSubsequence.cpp -o BestSubsequence
% ./BestSubsequence
Usage: BestSubsequence <sequence of integers>
% echo $status
1
% ./BestSubsequence -1 3 5 6 -2 -4 1 7 -15 12 7 -5
Best sum = 20 = a[ 1 .. 10 ] = { 3, 5, 6, -2, -4, 1, 7, -15, 12, 7 }
% echo $status
0
% ./BestSubsequence -1 3 5 6 -2 -4 1 7 -15 12 7 -5 -50 70
Best sum = 70 = a[ 13 .. 13 ] = { 70 }
```

2. Demonstrate that you can use a graphical debugger by uploading a screenshot as a .png file to Canvas taken as you stepped through your code, usefully displaying local variables or the call stack.